

Claims

1. An electrosurgical instrument for an endoscope or
5 a catheter, comprising
- a preferably flexible tube (7) which can be introduced through an instrument channel (1) of the endoscope or through a catheter lumen, is electrically nonconductive at least on its outer face, and is open at its distal end, the proximal end of which tube (7) can be connected to a gas source (29) for ionizable gas, in particular argon,
 - an electrode connection line (9) which is longitudinally displaceable in the tube (7) and whose proximal end can be connected to a high-frequency current generator (25),
 - an electrosurgical electrode (11) at the distal end of the electrode connection line (9),
 - a handling device (13) which is connected to the proximal end of the electrode connection line (9) and by means of which the electrosurgical electrode (11), by way of the electrode connection line (9), can be pushed out of the distal end of the tube (7) and can be drawn into the tube (7),
characterized in that a stationary electrode (33) is arranged at the distal end of the tube (7) and is stationary relative to this end, said stationary electrode (33) being electrically conductively connected to a contact element (37) which is arranged in the tube (7), at a distance from the distal end thereof, and which, when the electrosurgical electrode (11) is drawn into the tube (7), is in electrical contact with the electrosurgical electrode (11) and/or with the distal end of the electrode connection line (9).

2. The electrosurgical instrument as claimed in claim 1, characterized in that the tube (7) is designed as an electrically insulating, flexible plastic hose.
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3. The electrosurgical instrument as claimed in claim 1 or 2, characterized in that the electrical connection (35) between the active electrode surface of the stationary electrode (33) and the contact element (37) is electrically insulated relative to the electrosurgical electrode (11).
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4. The electrosurgical instrument as claimed in claim 3, characterized in that an insulating material sleeve (43) is provided in the area axially between the active electrode surface of the stationary electrode (33) and the contact element (37) and covers the electrical connection (35).
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- 20 5. The electrosurgical instrument as claimed in one of the preceding claims, characterized in that the electrode connection line (9) and/or the electrosurgical electrode (11) are provided at least partially with an insulation coating (45) which ends or is left open at a site overlapping the contact element (37; 63; 67) in the retracted position.
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6. The electrosurgical instrument as claimed in one of the preceding claims, characterized in that the contact element (37) is designed as a sleeve of electrically conductive material inserted into the tube (7).
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- 35 7. The electrosurgical instrument as claimed in claim 6, characterized in that the sleeve (37) is provided with an extension (35; 41) forming the stationary electrode (33) and reaching almost to the distal end of the tube.

8. The electrosurgical instrument as claimed in claim 6 or 7, characterized in that the sleeve (37b) is designed as part of a metal tube (47).
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9. The electrosurgical instrument as claimed in claim 6 or 7, characterized in that the sleeve (37a, c) is designed as part of a metal wire coil.
10. The electrosurgical instrument as claimed in claim 9, characterized in that the metal wire coil part (37a, c) is provided with an endpiece (41; 41c) forming the stationary electrode (33a, c), reaching almost to the distal end of the tube, and
15 forming the extension.
11. The electrosurgical instrument as claimed in one of claims 6 through 10, characterized in that an insulating material sleeve (43, 43c), which
20 encloses at least part of the extension (41; 41c) between itself and the tube (7a, c), is inserted into the tube (7a, c).
12. The electrosurgical instrument as claimed in one of claims 6, 8 or 9, characterized in that the sleeve (37b) reaches almost to the distal end of the tube (7b) and at the same time forms the
25 stationary electrode (33b).
30. The electrosurgical instrument as claimed in claim 12, characterized in that the inner jacket of the sleeve carries an insulating material layer (43b) between an area at the distal end forming the stationary electrode (33b) and an area at the
35 proximal end forming the contact element (37b).
14. The electrosurgical instrument as claimed in one of claims 1 through 6, characterized in that the contact element (63; 67) is held on a sleeve (59;

59e) inserted into the tube (7d, e).

15. The electrosurgical instrument as claimed in claim
5 14, characterized in that the sleeve (59) carries
an extension (61) forming the stationary electrode
(33d) and reaching almost to the distal end of the
tube (7d), which extension (61) forms the contact
element (63) at an axial distance from the distal
end of the tube (7d).
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16. The electrosurgical instrument as claimed in claim
15, characterized in that the extension (61), in
the area of the distal end of the tube (7d),
projects substantially central with respect to the
tube (7d), toward the distal end of the latter
and, in the area of the sleeve (59), forms the
contact element (63), and in that the
electrosurgical electrode (11d) is designed as a
flexible wire loop.
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17. The electrosurgical instrument as claimed in claim
20 14, characterized in that the sleeve (59e) reaches
almost to the distal end of the tube (7e) and at
the same time forms the stationary electrode
25 (33e), and in that the sleeve (59e) carries at
least one radially resilient tongue (67) forming
the contact element.
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18. The electrosurgical instrument as claimed in one
of the preceding claims, characterized in that the
handling device (13) comprises abutment means (21)
which limit the movement of the electrosurgical
electrode (11) in the proximal direction when it
is in the position drawn into the tube (7).
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19. The electrosurgical instrument as claimed in one
of the preceding claims, characterized in that the
handling device (13) comprises sensor means (39),
particularly in the form of a switch, which detect

the retracted position of the electrosurgical electrode (11) as a function of the position of the electrode connection line (9) relative to the tube (7).

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20. The electrosurgical instrument as claimed in one of the preceding claims, characterized in that the electrosurgical electrode (11) is designed as a flexible wire loop.

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21. The electrosurgical instrument as claimed in one of claims 1 through 19, characterized in that the electrosurgical electrode (11c) is designed as an injection needle, which is connected to the handling device via a hose (53) which is displaceable in the tube (7c).

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